

## EXERCISE APPARATUS

### 1     BACKGROUND OF THE INVENTION

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3           The present invention relates generally to  
4 exercise equipment and more particularly to an  
5 exercise equipment which utilizes a user's own weight  
6 as a resistant force.

7           The increased public interest in fitness and  
8 health has resulted in a great variety of exercise  
9 equipment available on the market. Each type of  
10 exercise equipment has its own specific function  
11 because it is designed to train one or more parts of  
12 the user's body. Most exercise equipment provides  
13 adjustable loads, such as weights, springs, or  
14 hydraulic and pneumatic cylinders to provide a force  
15 for the user to work against. Most prior art exercise  
16 devices are also large and bulky and require a  
17 significant amount of floor space. Moreover, prior  
18 art equipment is typically manufactured with numerous  
19 moving parts formed of tubular steel or the like and  
20 much of the equipment is designed for use in  
21 commercial fitness centers. To meet a demand for more  
22 convenient exercise equipment, manufacturer's have  
23 designed smaller units for residential use. These  
24 prior art devices are more convenient than the larger  
25 commercial devices but are frequently unattractive and  
26 too large to be placed in living areas of a home.

27           An object of the present invention is to provide  
28 a foldable exercise apparatus which utilizes the  
29 user's own weight as a load in training the user's  
30 muscles without any external loads being required  
31 which simplifies the structure of the exercise device.  
32 The exercise device of the present invention utilizes  
33 a frame which may be a folding A-frame which has a

1 generally U-shaped swing portion movably attached  
2 thereto and having a seat thereon for a user. A pair  
3 of arms are attached to the U-shaped swing portion  
4 along the hinge axis so that a person can grip the  
5 handles on the arms and push and pull to move the U-  
6 shaped portion seat and user occupying the seat. A  
7 leg exerciser has a leg bar attached to the frame and  
8 positioned for the user to push the swing portion and  
9 the user to move the swing portion with his legs.

10 Prior art U.S. Patents for exercise devices can  
11 be seen in the Lin Patent No. 5,674,161 for an  
12 exerciser utilizing a user's own weight as a load and  
13 has a seat which can be raised and lowered with the  
14 arms and legs pushing and pulling on handles or foot  
15 pedals. The Curtis exercise apparatus No. 5,470,298  
16 is an exercise apparatus formed in a chair but with an  
17 arm exercise and leg exercise station. The Moon U.S.  
18 Patent No. 5,595,558 is an exerciser of the rower-type  
19 while the Bjornsti U.S. Patent No. 5,695,438 is a  
20 training apparatus having a frame with wheels for  
21 supporting a user in the standing position while he  
22 moves the wheels and thus partially utilizes the  
23 user's weight for training. The Olschansky et al.  
24 Patent No. 5,722,917 is a displaceable seat exercise  
25 system and allows the user to exercise the arms and  
26 legs. The legs are exercised by rotary displacement  
27 of a seat relative to a foot support so that a  
28 resistive force is formed by a combination of the  
29 user's own body weight and a resistance element. The  
30 Chen Patent No. 5,899,836 is an exerciser for pulling  
31 and stepping exercises and has provisions for moving  
32 the seat up and down. The Smith U.S. Patent No.  
33 4,569,517 and the Hayes Patent No. 2,729,271 and the

1 White Patent No. 281,216 each show swing type  
2 exercisers.

3 In contrast to these devices, the present  
4 exercise apparatus may be foldable from a simple A-  
5 frame structure and utilizes the user's own weight as  
6 the resistive force for the user to exercise his arms  
7 and legs and simplifies the operation and size of the  
8 exercise equipment.

9  
10 SUMMARY OF THE INVENTION

11  
12 An exercise apparatus utilizes a user's own  
13 weight as a load and has a folding A-frame formed from  
14 two frame sections hinged together and being foldable  
15 on the hinge between a storage position and an  
16 operative position. A generally U-shaped swing  
17 portion is movably attached to one of the frame  
18 sections and has a seat attached thereto. The seat  
19 may have back and foot supports. A pair of arms each  
20 having a handle are attached to a generally U-shaped  
21 swing portion and extend therefrom so that a person  
22 sitting in the generally U-shaped swing portion seat  
23 and gripping and moving the handles can move the U-  
24 shaped swing portion and the person sitting therein  
25 relative to the A-frame to thereby exercise a person's  
26 arms. A leg exerciser is attached to one of the frame  
27 sections and positioned for a person seated in the  
28 seat to exercise the legs by pushing on a leg exercise  
29 bar with the feet to move the person sitting in the U-  
30 shaped swing portion so that a folding arm and leg  
31 exerciser apparatus utilizes a person's own mass for  
32 exercising the arms and legs. The folding frame  
33 sections can have a locking link to lock them in an

1 open position. The generally U-shaped swing portion  
2 is movably attached to one frame section at the end  
3 thereof and the other frame section is hinged to the  
4 one frame section. A pair of arms are adjustable  
5 attached to the generally U-shaped swing portion to  
6 thereby vary the position of the handles relative to  
7 the user occupying the seat. An alternate embodiment  
8 has a frame having a base frame portion and an angled  
9 upright frame portion for supporting a generally U-  
10 shaped swing portion movably attached to the upright  
11 frame section but otherwise operates in the same  
12 manner.

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#### 14 BRIEF DESCRIPTION OF THE DRAWINGS

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16 Other objects, features, and advantages of the  
17 present invention will be apparent from the written  
18 description and the drawings in which:

19 Figure 1 is a perspective view of an exerciser in  
20 accordance with the present invention in an operative  
21 position;

22 Figure 2 is a side elevation of the exerciser of  
23 Figure 1;

24 Figure 3 is a side elevation of the exerciser of  
25 Figures 1 and 2 in a folded position; and

26 Figure 4 is a perspective view of an alternate  
27 embodiment of an exerciser in accordance with the  
28 present invention.

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#### 30 DESCRIPTION OF THE PREFERRED EMBODIMENTS

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32 Referring to the drawings of Figures 1-3, an  
33 exercise apparatus 10 is illustrated of the type using

1 a user's own weight as a load has an A-frame shaped  
2 frame having frame sections 11 and 12 hinged together  
3 with a hinge 13. The frame sections 11 and 12 are  
4 both generally U-shaped frame sections. Frame section  
5 12 ends 14 are connected to the hinge 13 which is in  
6 the form of a strap 15 having a hinge pin 16 mounted  
7 between the ends of the arms 17 of the frame section  
8 11. When the A-frame is in an open position, as shown  
9 in Figures 1 and 2, a link member 18 locks the frame  
10 sections 11 and 12 together in an open position. One  
11 end of the link 18 is pinned with a pin 20 to the  
12 frame while the other end has a slot 21 which swings  
13 onto a pin positioned on the A-frame section 11.  
14 Swinging the arm 18 on the pin 20, unlocks the frame  
15 sections 11 and 12, and allows the A-frame section to  
16 be folded, as seen in Figure 13.

17 A generally U-shaped swing portion 22 is formed  
18 of a tubular material and is hinged to the frame  
19 section 11 ends with a hinge 23 which includes a  
20 sleeve 24 rotating on a bar attached to the frame  
21 section 17. The U-shaped swing portion 22 has a seat  
22 25 attached to the bottom of the U, which seat 25 has  
23 a backrest 26 attached thereto and a footrest 27  
24 attached to the bottom thereof. Footrest 27 is  
25 removably attached to a yoke 28 and locking pin 30.  
26 The hinge 23 sleeve portion 24 on each side of the U-  
27 shaped swing portion 22 has a disc 31 attached thereto  
28 having a plurality of apertures 32 therein spaced  
29 around the periphery thereof.

30 An arm supporting bracket 33 supports an arm 34  
31 and is attached to rotate on the bar 35. Each bracket  
32 33 is locked to the locking disc 31 with a spring  
33 loaded pin 36 which can lock into any one of the

1 plurality of apertures 32 in a disc 31 to position the  
2 extending arm 34 in different positions as desired.  
3 Each arm 34 has a handle 37 attached thereto. In this  
4 manner, a person sitting on the seat 25 on the U-  
5 shaped swing portion 22 can adjust the handle arms 34  
6 to any position desired by rotating the arm and  
7 locking it to the disc 31 with the locking pin 36.  
8 The handle can then be pulled on to move the U-shaped  
9 swing portion 22 back and forth by pushing and pulling  
10 on the handles 37 while the user is sitting on the  
11 seat 25. Thus, the user pushes the swing portion 22  
12 against the user's own weight.

13 The A-frame section 12 has a leg exerciser  
14 portion 38 attached thereto which includes a foot bar  
15 40 which may have a disc 41 attached to each end, each  
16 disc 41 has a plurality of apertures 42 therein around  
17 the periphery thereof and which is attached to the  
18 frame section 12 with a bar 43 and which is further  
19 attached to the foot bar 40. The leg exerciser 38 can  
20 be adjusted for position so that a person sitting in  
21 the seat 25 may remove his feet from the footrest 27  
22 and place them on the leg exerciser 38 bar 40 and then  
23 use his legs to push the U-shaped swing portion 22  
24 with the user sitting therein back and forth to  
25 exercise the legs. The A-frame section 12 is made of  
26 a U-shaped tubing 44 and has a square channel member  
27 45 therein with an aperture 46 for sliding an  
28 attachment thereinto so that an additional piece of  
29 exercise equipment can be attached thereto for  
30 exercising the legs, such as a peddling exerciser.

31 The exerciser 10 of the present invention  
32 advantageously is lightweight and simplified by the  
33 user using his own weight as a resistive mass. It may

1 be folded, as seen in Figure 3, from the open position  
2 of Figures 1 and 2 to the folded position of Figure 3  
3 by simply releasing the locking links 18 folding the  
4 A-frame sections 11 and 12 together. This allows the  
5 seat 25, having the foot support 27 and back support  
6 26 folded, to fold. The arms are rotated to allow for  
7 one convenient folded package which can be easily  
8 carried by one person to any location desired or  
9 packed within a vehicle for easy transportation. It  
10 also allows the exerciser to be packed for shipping  
11 and storage.

12 Turning to Figure 4, an alternate embodiment 50  
13 of the exerciser of Figure 1-3 is illustrated having  
14 the identical U-shaped swing portion 22 having the  
15 seat 25 mounted thereon and having the foot support 27  
16 and back support 26. The exerciser 50 also has the  
17 arms 34 with the handles 37 mounted with the bracket  
18 33 mounted to a rod 35 and connected to the disc 31  
19 having apertures 32 and a locking pin 36. In this  
20 embodiment, the U-shaped swing portion 22 is mounted  
21 to a fixed A-frame 51 which has been turned on its  
22 side to provide for a base frame portion 52 and an  
23 angled upright frame portion 53. The frame base  
24 portion 52 has a foot exerciser 54 mounted in a square  
25 channel 55 mounted in the front frame member 56 of the  
26 base frame 52. The foot exerciser 54 has a foot  
27 supporting member 57 forming a tee on the member 58  
28 which is attached to a square channel-like member 60  
29 which slides and is locked into the square channel 55  
30 to hold it in position. A locking pin 61 passing  
31 through the locking channel sleeve 55 allows the  
32 locking of the foot rest 57 in place. The frame 51 in  
33 this embodiment is formed from a channel rather than

1 a tubular frame and may be made of a metal, such as  
2 steel. Similarly, the frame of Figures 1-3 can be  
3 made of a steel tubing or any other material desired  
4 that is sufficiently strong to support the user.

5 It should be clear at this time that an exerciser  
6 has been provided which allows the user to exercise  
7 the arms and the legs and which utilizes the user's  
8 own weight as a load to thereby simplify the exerciser  
9 and which can be easily moved between positions and  
10 easily folded for storage or shipping. It can be  
11 rapidly set up for use in the home. However, the  
12 present invention should not be considered as limited  
13 to the forms shown which are to be considered  
14 illustrative rather than restrictive.